April Mixed Waste Subgroup Highlights

The Hanford STCG Mixed Waste (MW) Subgroup met on April 8, 1999 in the EESB Stampede Room. John April introduced Scott Petersen as the new BHI representative on the subgroup. John discussed the 618-4 Burial Grounds Project he is involved with. While cleaning up the burial grounds drums were uncovered that contained depleted uranium chips in oil. The drums also contained PCB and other metals. To date more than 300 drums have been found and work was halted in order to determine what to do with these drums. Characterization of the waste site occurred in September and October and based on that data a treatment plan was developed that was finished in March. Four options were identified in the treatment plan and John briefly discussed each option.

The first option examined was to stabilize the waste in place using cement. The problem with this option is that oil does not mix well with cement. The second option studied is to use Petroset, an absorbent, to soak up the oil and stabilize it. LANL has done a study of this approach and found a problem with VOCs. The third option is to vitrify the waste ex situ at the ATG facility. ATG does not yet have a license to handle this type of waste but is in the process of obtaining one. The last option examined is to vitrify the waste in place using the GEOSAFE technology. A treatability study is needed of this approach which includes a demo test. The MWFA has agreed to fund part of the demonstration ($30K) and John is trying to find matching funds to do the test this FY.

Norm Olson and Larbi Bounini went to Lasertronics in March to watch a demonstration of the laser decontamination system. This demo was videotaped and we will see the tape after it is edited. Lasertronics used non-radioactive samples that we sent them for the demo.

Bruce Makenas, Duke Engineering and Services Hanford, presented an overview of the needs for the Spent Nuclear Fuel (SNF) Program. Fuel is to be removed from the K-Basins along with sludge and debris. The intact fuel is to be cleaned and put into a Multi-Canister Overpack (MCO) and cask before being stored. The sludge is to be added to the TWRS tanks while the debris is to be disposed of or recycled. Bruce reviewed the needs that were critical to the success of the ACPC. The MCO Monitoring Methods need, RL-SNF04, will have to be met in 2001 and is a technology gap as there is no baseline method to meet it now. The monitoring needs to be able to measure the identified parameters of concern including pressure, oxygen content, hydrogen content and weld condition. These measurements would have to be done non-invasively and acoustic methods are being examined now. The sludge treatment process need, RL-SNF06, is also a technology gap that is a critical need. A treatment process for the K-Basin sludge needs to be started in 2004 to meet the TPA milestone to remove all of it by August 2005. The need entitled “Retrieval and Immobilization of Minute

Debris and Fuel from K-Basin", RL-SNF07, is a new need on the list and deals with removal of material in the basins after the sludge retrieval. The basins cannot be decommissioned until this need is met. The Decontamination of K-Basin Pool need, RL-SNF02, is the final critical need to be met before completion of the program in 2007. There has been no baseline method identified to meet this need.

Larbi Bounini reviewed the MW Technology needs highlighting all the changes from last year. For RL-MW01, Remote Macroencapulation of RH MLLW Debris, the waste volumes and schedule requirements were updated. For RL-MW02, dealing with remotely controlled size/volume reduction for RH MLLW and RH TRUW, the needs definition was improved as well as updating the waste volumes and schedule requirements. The need entitled "Remote Characterization to Distinguish TRUW from Non-TRUW Portions of Various-Sized Debris in a High Beta/Gamma Field", RL-MW03, was deleted from the list because WMH has no responsibility for dealing with the tank waste. TWRS has already deployed acceptable technology and B&W Hanford is developing technology for other unique applications. The D&D Subgroup should consider this need if further development is needed.

For the next three technology needs (RL-MW04, 05, 06) the only changes made were to update the schedule requirements. All three of these needs are being actively worked on with demonstrations going forward with private companies and with the help of the MWFA. For the MW needs, RL-MW013 and 014, the schedule requirements were updated. The Pu Focus Area, now the Nuclear Materials Focus Area, may help us with RL-MW014, as it deals with disposing of 12 drums of Pu 238. The next need, RL-MW015, entitled "System to Determine the Integrity of TRUW Drums During Retrieval" will be removed from our list and sent to the Subcon Subgroup for consideration. It fits with their area rather than the MW Subgroups'. There were no changes to the next three need statements: RL-MW016, 017 and 018. The caisson need, 016, should also include the ER caissons in the 600 Area as well as the caissons in the 200 Area. This would strengthen the case to solve the need.

The need, RL-MW019, entitled "Stabilization Mixing System (T-Plant)" is deleted from this year's list as the waste stream will be treated under a commercial contract. The next four technology needs, RL-MW020, 021, 022 and 023, had no changes from last year. The next need, RL-MW024, entitled "Screening of Materials for PCB Content" will be removed from the list and sent to the Subcon Subgroup for their consideration. The last technology need, RL-MW025, dealing with the certification of BWAS was just added in December 1998 and no changes will be made to the statement.

The rest of the meeting focused on the MW science needs to be included in this years needs statements. Norm Olson reviewed the changes to last years science needs first. There is no change to RL-MW07-S dealing with non-

intrusive, non-destructive characterization methods for RCRA components of MLLW. The need, RL-MW08-S, is being deleted as it was determined not to be a science need. In addition technologies are being built now to meet this need. The next science need, RL-MW09-S, was also deleted as not being relevant any longer. The need, RL-MW10-S, was seen as too broad and the need, RL-MW07-S, has the same objective. Therefore MW10-S will be deleted. The next science need, RL-MW11-S was also seen as too broad and not a MW need but rather a general health physics need. In addition, technologies are being developed in this area already. The final old science need, RL-MW12-S, dealing with buried wastes was seen as too broad also and more of a general ER need and so will be deleted from our list and sent to the Subcon Subgroup for consideration.

Wayne Ross handed out two more new science needs he has been working on. The first dealt with "High-Sensitivity Analytical Techniques" to use smaller samples. Norm Olson said he would take this need to the WMH to get contractor approval of the need. The next need Wayne presented was "Tritium Separations". This is linked to technology need, RL-MW023, which is focused on current technology. A discussion ensued or to whether to have both a technology and science need for tritium separation. Norm agreed to take this need back to the projects to see if they would support a science need. Norm is also working on another technology need entitled "Getter for Hydrogen". When it is written up he will see that the entire subgroup gets a copy for review.

The next MW Subgroup Meeting will be on May 13 at 1pm in the ETB Wenatchee River Room.

Mixed Waste Subgroup Meeting Attendees - 04/08/99

John April	BHI	372-9632
Gary Ballew	PREC	946-0611
Bill Bonner	PNNL	372-6263
Larbi Bounini	WMH	376-4650
Tom Frater	FDH	372-4291
Pamela Innis	EPA	376-4919
Bruce Makenas	DESH	376-5447
Tina Masterson-Heggen	Ecology	736-5701
Norm Olson	FDH	372-4810
Scott Petersen	BHI	372-9126
Gordon Rogers	HAB	547-7403
Wayne Ross	PNNL	372-4684
Shannon Saget	DOE-RL	372-4029
Steve Weakley	PNNL	372-4275